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## PATENT ABSTRACTS OF JAPAN

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(71) Applicant: **mitsui petrochem ind ltd**

(72) Inventor: **azuma yasusuke  
tabata homare**

(74) Representative:

### (54) PRODUCTION OF TAXANE-TYPE DITERPENE

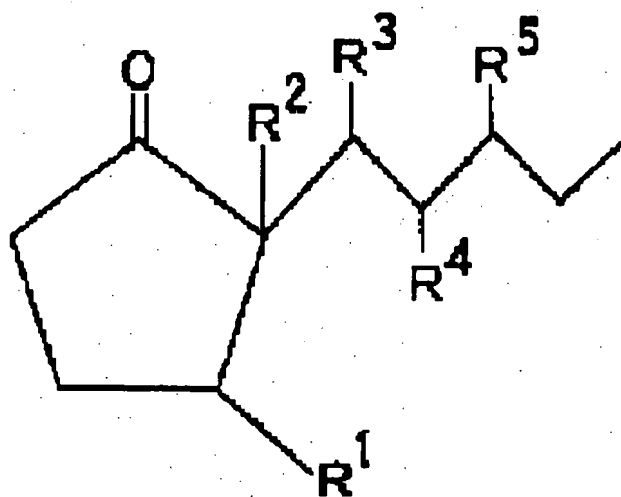
(57) Abstract:

**PURPOSE:** To obtain a taxane-type diterpene in high productivity useful as treating agent, etc., for ovarian cancer, breast cancer, lung cancer, etc., by culturing plant tissue or cells capable of producing a taxane-type diterpene in the presence of an amine and recovering the product from the cultured material and medium.

**CONSTITUTION:** Tissue and/or cells (e.g. callus) of a plant (e.g. *Taxus baccata*) producing a taxane-type diterpene is cultured in the presence of an amine (e.g. spermidine) and a jasmonic acid expressed by the formula {R1 is a 1-4C alkyl or a group of the formula (CH<sub>2</sub>)<sub>n</sub>COR6 [R6 is OH, OM (M is an alkali metal, an alkaline earth metal or NH<sub>4</sub>), NHR7 (R7 is H, a 1-4C acyl, a 1-4 alkyl or an amino acid residue), OR8 (R8 is a 1-4C alkyl or a carbohydrate residue); n=1-7]; R2 to R5 are each H or adjacent two groups together form a double bond}. The product is recovered from the cultured material and/or the cultured medium to obtain the objective taxane-type diterpene (e.g. taxol), which is useful as treating agent for

ovarian cancer, breast cancer, lung  
cancer, etc.

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TABATA HOMARE;**Assignee: **mitsui petrochem ind ltd**  
[News, Profiles, Stocks and More about this company](#)Published / Filed: **March 5, 1996 / Aug. 25, 1994**Application Number: **JP1994000201151**IPC Code: **C12P 7/00; A61K 35/78; C12P 17/02; C12P 7/00;**Priority Number: **Aug. 25, 1994 JP1994000201151**

Abstract:



PURPOSE: To obtain a taxane-type diterpene in high productivity useful as treating agent, etc., for ovarian cancer, breast cancer, lung cancer, etc., by culturing plant tissue or cells capable of producing a taxane-type diterpene in the presence of an amine and recovering the product from the cultured material and medium.

CONSTITUTION: Tissue and/or cells (e.g. callus) of a plant (e.g. *Taxus baccata*) producing a taxane-type diterpene is cultured in the presence of an amine (e.g. spermidine) and a jasmonic acid expressed by the formula {R1 is a 1-4C alkyl or a group of the formula (CH<sub>2</sub>)<sub>n</sub>COR6 [R6 is OH, OM (M is an alkali metal, an alkaline earth metal or NH<sub>4</sub>), NHR7 (R7 is H, a 1-4C acyl, a 1-4 alkyl or an amino acid residue), OR8 (R8 is a 1-4C alkyl or a carbohydrate residue); n=1-7]; R2 to R5 are each H or adjacent two groups together form a double bond). The product is recovered from the cultured material and/or the cultured medium to obtain the objective taxane-type diterpene (e.g. taxol), which is useful as treating agent for ovarian cancer, breast cancer, lung cancer, etc.

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Designated Country: **CA CN EP KR US DE FR GB IT NL**




Family:

| PDF   | Publication                     | Pub. Date     | Filed          | Title   |
|---|---------------------------------|---------------|----------------|---|
|  | <a href="#">WO9514103A1</a>     | May 26, 1995  | Nov. 9, 1994   | PROCESS FOR PRODUCING TAXANE DITERPENE AND METHOD OF HARVESTING CULTURED CELL CAPABLE OF PRODUCING TAXANE DITERPENE IN HIGH YIELD           |
|  | <a href="#">US20020012976A1</a> | Jan. 31, 2002 | April 28, 1999 | METHOD OF PRODUCING A TAXANE-TYPE DITERPENE AND A METHOD OF OBTAINING CULTURED CELLS WHICH PRODUCE THE TAXANE-TYPE DITERPENE AT A HIGH RATE |
|   | <a href="#">US6403343B2</a>     | June 11, 2002 |                |   |

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|--|---------------|----------------|---|
|  <u>US6403343</u>     | June 11, 2002 | April 28, 1999 | Method of producing a taxane-type diterpene and a method of obtaining cultured cells which produce the taxane-type diterpene at a high rate |
|  <u>US5968789</u>     | Oct. 19, 1999 | Feb. 28, 1997  | Method of producing a taxane-type diterpene and a method of obtaining cultured cells which produce the taxane-type diterpene at a high rate |
|  <u>US5637484</u>     | June 10, 1997 | July 14, 1995  | Method of producing a taxane-type diterpene and a method of obtaining cultured cells which produce the taxane-type diterpene at a high rate |
| <u>KR0172606B1</u>   | Feb. 1, 1999  | July 5, 1995   | PROCESS FOR PRODUCING TAXANE DITERPENE  |
| <u>KR0169081B1</u>   | Jan. 15, 1999 | June 18, 1998  | METHOD OF HARVESTING CULTURED CELLS CAPABLE OF PRODUCING TAXANE DITERPENE IN HIGH YIELD   |
| <u>KR0169080B1</u>   | Jan. 15, 1999 | June 18, 1998  | PROCESS FOR PRODUCING TAXANE DITERPENE  |
| <u>KR0169079B1</u>   | Jan. 15, 1999 | June 18, 1998  | PROCESS FOR PRODUCING TAXANE DITERPENE  |
| <u>JP8116981A2</u>   | May 14, 1996  | Oct. 18, 1994  | PRODUCTION OF TAXANE-TYPE DITERPENE   |
| <u>JP8056681A2</u>   | March 5, 1996 | Aug. 25, 1994  | PRODUCTION OF TAXANE-TYPE DITERPENE   |
| <u>JP8056680A2</u>   | March 5, 1996 | Aug. 25, 1994  | PRODUCTION OF TAXANE-TYPE DITERPENE   |
| <u>JP8033490A2</u>   | Feb. 6, 1996  | March 7, 1995  | PRODUCTION OF TAXANE-TYPE DITERPENE   |
| <u>JP8009983A2</u>   | Jan. 16, 1996 | June 28, 1994  | PRODUCTION OF TAXANE-TYPE DITERPENE   |
| <u>JP7308197A2</u>   | Nov. 28, 1995 | May 18, 1994   | PRODUCTION OF TAXANE TYPE DITERPENE   |
| <u>JP7308196A2</u>   | Nov. 28, 1995 | May 18, 1994   | PRODUCTION OF TAXANE TYPE DITERPENE   |
| <u>JP7135967A2</u>   | May 30, 1995  | Nov. 15, 1993  | PREPARATION OF CULTURED CELL HAVING HIGH PRODUCTIVITY OF TAXANE-TYPE DITERPENE  |
| <u>JP2967034B2</u>   | Oct. 25, 1999 |                |   |
|  <u>EP1063300A3</u> | Jan. 2, 2002  | Nov. 9, 1994   | A method of producing a taxane-type diterpene and method of obtaining cultured cells which produce the taxane-type diterpene at a high rate |
|  <u>EP1063300A2</u> | Dec. 27, 2000 | Nov. 9, 1994   | A method of producing a taxane-type diterpene and method of obtaining cultured cells which produce the taxane-type diterpene at a high rate |
|  <u>EP1063299A3</u> | Jan. 2, 2002  | Nov. 9, 1994   | A method of producing a taxane-type diterpene and method of obtaining cultured cells which produce the taxane-type diterpene at a high rate |
|  <u>EP1063299A2</u> | Dec. 27, 2000 | Nov. 9, 1994   | A method of producing a taxane-type diterpene and method of obtaining cultured cells which produce the taxane-type diterpene at a high rate |
|  <u>EP1054065B1</u> | July 31, 2002 | Nov. 9, 1994   | A method of producing a taxane-type diterpene and method of obtaining cultured cells which produce the taxane-type diterpene at a high rate |
|  |               |                | A method of producing a taxane-type diterpene and method of obtaining   |

|   |                |               |  |
|---|----------------|---------------|--|
|  <a href="#">EP1054011</a>    | Nov. 22, 2000  | Nov. 9, 1994  | cultured cells which produce the taxane-type diterpene at a high rate  |
|  <a href="#">EP0683232B1</a> | Feb. 14, 2001  | Nov. 9, 1994  | PROCESS FOR PRODUCING TAXANE DITERPENE AND METHOD OF HARVESTING CULTURED CELL CAPABLE OF PRODUCING TAXANE DITERPENE IN HIGH YIELD              |
| <a href="#">EP0683232A4</a>   | Nov. 29, 1995  | Nov. 9, 1994  |  |
|  <a href="#">EP0683232A1</a> | Nov. 22, 1995  | Nov. 9, 1994  | PROCESS FOR PRODUCING TAXANE DITERPENE AND METHOD OF HARVESTING CULTURED CELL CAPABLE OF PRODUCING TAXANE DITERPENE IN HIGH YIELD              |
| <a href="#">DE69431135C0</a>  | Sept. 5, 2002  | Nov. 9, 1994  | METHODE ZUR HERSTELLUNG VON TAXAN-TYP DITERPEN UND METHODE ZUR GEWINNUNG VON KULTURZELLEN DIE TAXAN-TYP DITERPEN IN HOHEN AUSBEUTEN HERSTELLEN |
| <a href="#">DE69426692T2</a>  | June 21, 2001  | Nov. 9, 1994  | METHODE ZUR HERSTELLUNG VON TAXAN-DITERPEN UND METHODE ZUM EINTEN VON KULTURZELLEN, DIE TAXAN-DITERPEN IN HOHEN AUSBEUTEN HERSTELLEN           |
| <a href="#">DE69426692C0</a>  | March 22, 2001 | Nov. 9, 1994  | METHODE ZUR HERSTELLUNG VON TAXAN-DITERPEN UND METHODE ZUM EINTEN VON KULTURZELLEN, DIE TAXAN-DITERPEN IN HOHEN AUSBEUTEN HERSTELLEN           |
| <a href="#">CN1251391A</a>  | April 26, 2000 | June 30, 1999 | METHOD FOR OBTAINING HIGH-PRODUCTIVE CULTURE CELLS OF TAXIANES DITERPENE   |
| <a href="#">CN1248630A</a>  | March 29, 2000 | June 30, 1999 | PROCESS FOR PRODUCING TAXUS ALKANE DITERPENE   |
| <a href="#">CN1248629A</a>  | March 29, 2000 | June 30, 1999 | PROCESS FOR PRODUCING TAXUS ALKANE DITERPENE   |
| <a href="#">CN1119028A</a>  | March 20, 1996 | Nov. 9, 1994  | PROCESS FOR PRODUCING TAXANE DITERPENE AND METHOD OF HARVESTING CULTURED CELL CAPABLE OF PRODUCING TAXANE DITERPENE IN HIGH YIELD              |
| <a href="#">CN1083012B</a>  | April 17, 2002 | June 30, 1999 | PROCESS FOR PRODUCING TAXANES DITERPENE  |
| <a href="#">CN1083011B</a>  | April 17, 2002 | June 30, 1999 | METHOD FOR OBTAINING HIGH-PRODUCTION CULTURE CELLS OF TAXANES DITERPENE  |
| <a href="#">CN1083010B</a>  | April 17, 2002 | June 30, 1999 | PROCESS FOR PRODUCING TAXANES ALKANE DITERPENE   |
| <a href="#">CN1058054B</a>  | Nov. 1, 2000   | Nov. 9, 1994  | PROCESS FOR PRODUCING TAXANE DITERPENE AND METHOD OF HARVESTING CULTURED CELL CAPABLE OF PRODUCING TAXANE DITERPENE IN HIGH YIELD              |
| <a href="#">CA2153986AA</a>   | May 26, 1995   | Nov. 9, 1994  | A METHOD OF PRODUCING A TAXANE-TYPE DITERPENE AND A METHOD OF OBTAINING CULTURED CELLS WHICH PRODUCE THE TAXANE-TYPE DITERPENE AT A HIGH RATE  |
| 40 family members shown above   |                |               |  |